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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,822	11/19/2003	Kazuyuki Matsumoto	1619.1026	3651

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STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

CASCHERA, ANTONIO A

ART UNIT PAPER NUMBER

2676

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/715,822

**Applicant(s)**

MATSUMOTO ET AL.

**Examiner**

Antonio A. Caschera

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,9-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) 2,6 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7,9,11 and 13-18 is/are rejected.
- 7) ☒ Claim(s) 4,8 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5, 7, 9, 11 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukoyama et al. (U.S. Patent 6,831,659 B1) in view of Palm (U.S. Patent 5,742,291).

In reference to claims 1, 13 and 16, Mukoyama et al. discloses an image display device and method for displaying three-dimensional images to represent natural images (see column 6, lines 60-64). Mukoyama et al. discloses an embodiment of the invention where highly realistic trees are drawn onto a display (see column 14, lines 1-11 and Figure 20). Mukoyama et al. discloses establishing the directional view in which "P" elements, representing the leaf clusters of a tree, face (see column 14, lines 19-28, 38-48 and Figure 15). Mukoyama et al. discloses setting the orientation of each display element using X,Y,Z coordinates (see column 15, lines 3-10). Note, since Mukoyama et al. discloses using X,Y,Z coordinates in orienting each display

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element, the office interprets that Mukoyama et al. inherently sets up three axes that are orthogonal to one another in a three dimensional space. Mukoyama et al. discloses determining the square shape of each P element, defined by four apexes, which are later texture mapped (see columns 14-15, lines 66-3, column 15, lines 15-16). Note, the office interprets these four apexes to form the “virtual surface” of Applicant’s claims, using the X, Y, Z axes. Mukoyama et al. discloses configuring the texture mapping of each display element using weighting coefficients for each of the apexes (see column 15, lines 27-29 and 33-37). Note, since these weighting coefficients affect the drawing of the texture map, the office interprets the number of weighting coefficients, one supplied for each apex whereby the number of apexes may vary per display element (see column 15, lines 2-3), functionally equivalent to the number of drawing iterations of applicant’s claims as for each weighting coefficient of Mukoyama et al., processing must be performed thereupon. Mukoyama et al. also discloses drawing each display element with a texture mapped thereto on the display using the apexes and weighting coefficients previously calculated (see column 16, lines 6-28, 54-55 and “PT” of Figure 20). Mukoyama et al. discloses drawing a wireframe of the tree using the display elements as divisions of each texture mapped to each display element (see column 16, lines 46-53 and Figures 14 and 19). Mukoyama et al. does not explicitly disclose moving the wireframe by dragging the wireframe however Palm does. Palm discloses a method of creating and editing wireframes wherein the vertices of the wireframe can be selected and moved from one location to another by dragging, be deleted from the wireframe or new vertices added to the wireframe (see column 2, lines 55-57, column 3, lines 10-17 and Figures 9-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the realistic texture mapping techniques of

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Mukoyama et al. with the wireframe manipulation techniques of Palm in order to create more realistic renditions of 3-D models featuring life-like surface renderings faster and easier (see column 2, lines 36-52 of Palm). Note, the office interprets that using the techniques of Mukoyama et al. and Palm together would inherently change apex value coordinates in Mukoyama as wireframe vertices are dragged and moved because apex values would move with the wireframe (see Figure 19). Further note, in reference to claim 16, Mukoyama et al. and Palm also disclose computer readable instructions for performing the above disclosed methods (see column 5, lines 15-26 and column 14, lines 7-11 of Mukoyama et al. and column 3, line 10-11 of Palm). (further see *Response to Arguments* below).

In reference to claims 3, 7 and 11, Mukoyama et al. and Palm disclose all of the claim limitations as applied to claims 1, 5 and 9 respectively above. Mukoyama et al. discloses setting the orientation of each display element using X,Y,Z coordinates (see column 15, lines 3-10). Further, in reference to Figure 16 of Mukoyama et al., the drawing points, apexes VX3 and VX4 for example, define a side most parallel with the Y axis while apexes VX3 and VX1, define a side most parallel with the z axis and therefore the office interprets Mukoyama et al. to inherently disclose determining these points based upon determining a side most parallel with the three axes.

In reference to claims 5, 14 and 17, Mukoyama et al. discloses an image display device and method for displaying three-dimensional images to represent natural images (see column 6, lines 60-64). Mukoyama et al. discloses an embodiment of the invention where highly realistic trees are drawn onto a display (see column 14, lines 1-11 and Figure 20). Mukoyama et al. discloses establishing the directional view in which "P" elements, representing the leaf clusters

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of a tree, face (see column 14, lines 19-28, 38-48 and Figure 15). Mukoyama et al. discloses determining the square shape of each P element, defined by four apexes, which are later texture mapped (see columns 14-15, lines 66-3, column 15, lines 15-16). Mukoyama et al. discloses configuring the texture mapping of each display element using weighting coefficients for each of the apexes (see column 15, lines 27-29 and 33-37). Note, since these weighting coefficients affect the drawing of the texture map, the office interprets the number of weighting coefficients, one supplied for each apex whereby the number of apexes may vary per display element (see column 15, lines 2-3), functionally equivalent to the number of drawing iterations of applicant's claims as for each weighting coefficient of Mukoyama et al., processing must be performed thereupon. Mukoyama et al. also discloses drawing each display element with a texture mapped thereto on the display using the apexes and weighting coefficients previously calculated (see column 16, lines 6-28, 54-55 and "PT" of Figure 20). Mukoyama et al. discloses drawing a wireframe of the tree using the display elements as divisions of each texture mapped to each display element (see column 16, lines 46-53 and Figures 14 and 19). Mukoyama et al. does not explicitly disclose moving the wireframe by dragging the wireframe and changing the number of lines in the wireframe however Palm does. Palm discloses a method of creating and editing wireframes wherein the vertices of the wireframe can be selected and moved from one location to another by dragging, be deleted from the wireframe or new vertices added to the wireframe (see column 2, lines 55-57, column 3, lines 10-17 and Figures 9-11). Note, the office interprets that since Palm discloses adding and deleting vertices in the wireframe, Palm inherently discloses changing the number of lines and thus changing the number of drawing iterations as adding vertices creates additional points where additional lines must connect to therefore

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requiring additional processing (see Figures 10 and 11 of Palm). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the realistic texture mapping techniques of Mukoyama et al. with the wireframe manipulation techniques of Palm in order to create more realistic renditions of 3-D models featuring life-like surface renderings faster and easier (see column 2, lines 36-52 of Palm). Note, the office interprets that using the techniques of Mukoyama et al. and Palm together would inherently change apex value coordinates in Mukoyama as wireframe vertices are dragged and moved because apex values would move with the wireframe (see Figure 19). Further note, in reference to claim 17, Mukoyama et al. and Palm also disclose computer readable instructions for performing the above disclosed methods (see column 5, lines 15-26 and column 14, lines 7-11 of Mukoyama et al. and column 3, line 10-11 of Palm). (further see *Response to Arguments* below).

In reference to claims 9, 15 and 18, claims 9, 15 and 18 are equivalent in scope to the combination of claims 1, 13, 16 and 5, 14 and 17 respectively above and are therefore rejected under equivalent rationale.

### ***Response to Arguments***

3. The cancellation of claims 2, 6 and 10 is noted.
4. Applicant's arguments filed 05/10/05 have been fully considered but they are not persuasive.

In reference to claims 1, 5, 9 and 13-18, Applicant argues that neither Mukoyama or Palm teach, "setting three axes that will be orthogonal to one another using a plurality of points of the three dimensional image in order to establish a three dimensional space on the three-dimensional

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image,” (see page 11 of Applicant’s Remarks). The office disagrees as Mukoyama et al. discloses setting the orientation of each display element using X,Y,Z coordinates (see column 15, lines 3-10). Therefore, Mukoyama et al. must inherently disclose setting three axes orthogonal to one another establishing a three dimensional space. Such space further defined by the X, Y, Z coordinates of the four apexes of the element face. Therefore, the office maintains its previous rejection based upon Mukoyama et al.

Even further, Applicant argues that neither Mukoyama or Palm disclose, “wherein in a case a movement of the wireframe is requested by dragging the wireframe on the display, a value of the drawing start point is changed in accordance with the amount of movement of the dragging the wireframe,” (see pages 11-12 of Applicant’s arguments). The office disagrees as Palm is combined with Mukoyama to show the feature of moving by dragging of a wireframe (see above rejections). Specifically, Palm discloses a method of creating and editing wireframes wherein the vertices of the wireframe can be selected and moved from one location to another by dragging, be deleted from the wireframe or new vertices added to the wireframe (see column 2, lines 55-57, column 3, lines 10-17 and Figures 9-11). The combination of Mukoyama and Palm surely shows such functionality of dragging the wireframes as the techniques of Mukoyama et al. and Palm inherently change apex value coordinates as the wireframe vertices are dragged and moved because apex values would move with the wireframe (see Figure 19 of Mukoyama et al.). Therefore, the office maintains its rejection based upon Mukoyama and Palm in view of the dragging limitation recited by application’s claims.



*Allowable Subject Matter*

5. Claims 4, 8 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claims 4, 8 and 12, the prior art of record (Mukoyama et al. (U.S. Patent 6,831,659 B1) and Palm (U.S. Patent 5,742,291)), does not explicitly disclose determining the number of drawing iterations by determining a length of the side of the face and using this length with a size of texture in combination with the further limitations of claims 4, 8 and 12 respectively.

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

**Any response to this action should be mailed to:**

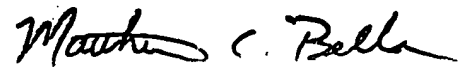
Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

aac

7/18/05